

The Halictine Bees of Sri Lanka and the Vicinity. II. *Nesohalictus* (Hymenoptera: Halictidae)

SHÔICHI F. SAKAGAMI

Zoological Section, Institute of Low Temperature Science
Hokkaido University, Sapporo 060, Japan

ABSTRACT—Redescriptions of two halictine bee species, *Lasioglossum* (*Nesohalictus*) *serenum* (Cameron) from Sri Lanka and India and *L. (N.) halictoides* (Smith) from Insular Malesia, and taxonomic notes on *Nesohalictus* characterized by specialized glossa and femoral scopa.

INTRODUCTION

Nesohalictus Crawford [1] is an Indomalayan subgenus of the large halictine genus *Lasioglossum* Curtis and is distinguished from congeneric subgenera by the unusually long glossa (Figs. 1, 7A, B) and sparse and simplified femoral scopa (Fig. 2D) [2]. This subgenus contains three species [3, 4]. In the present paper, *L. (N.) serenum* (Cameron) from Sri Lanka and India is compared with *L. (N.) halictoides* (Smith), the type species of *Nesohalictus*, together with some taxonomic notes on the subgenus.

RESULTS

Features Common to *L. serenum* and *L. halictoides*

Female: *Coloration* Non-metallic and basically black; tergal margins not much paler. Mandible dark brown, apically chestnut brown.

Pilosity Hairs pale except some brownish hairs on mesoscutum and mesoscutellum, and simple, erect, dark hairs on metasomal terga. Vestiture moderately dense, not hiding surface except tomentum on gena along outer orbit, pronotum and basal tergal fasciae. *Head* Vertex with long



FIG. 1. *L. serenum* (♀), with the mouth parts extended.

Accepted June 28, 1990

Received June 17, 1990

(275 μm), erect, plumose hairs, mixed with denser, shorter (30–50 μm), simple hairs, the latter also on ocellular and circumocellar areas and on frons above. Long hairs around antenna (300 μm) becoming shorter (100 μm), semierect on paraocular area (Fig. 2A) mixed with short, appressed, tomental hairs but not completely hiding surface; on paraocular area below gradually changing to plumose, semierect hairs ($\pm 75 \mu\text{m}$). Hairs on supraclypeus rather sparse, plumose, semierect (75–125 μm); on clypeus 175–225 μm , poorly plumose and appressed, apical bristles to 375 μm . Gena tomented with short (30 μm), plumose hairs, denser along outer orbit; gradually sparser postward admixed with erect, plumose hairs (175 μm), the latter sparser and longer (375 μm) toward hypostoma. *Mesosoma* Pronotum densely tomented, anteriorly with erect, plumose hairs (200 μm). Mesoscutum with erect to semierect, moderately dense hairs (150–200 μm); underhairs represented only by sparse, narrow tomentum along lateral margin. Mesoscutellum similar, posterior fringe attaining 500 μm . Metanotal tomentum dense, admixed with moderately dense, plumose, erect hairs. Propodeal dorsum glabrous except triangular, sparse, tomental patch on posterolateral area (Fig. 3). Mesopleuron (above 175 μm , below 250 μm), and propodeal side and declivity (250 μm) with moderately dense, erect, plumose hairs; underhairs tomented on metapleuron and propodeal side, virtually absent on mesopleuron. Tegula anteriorly with dense, semierect, plumose hairs (100 μm); gradually shorter, sparser and simple postward; posterolateral two thirds glabrous. Fore trochanter and femur below with plumose, relatively sparse hairs (300–375 μm). Mid leg with trochanter and femoral hairs relatively short (300 and 250 μm ; in other *Lasioglossum*, e.g. *L. duplex*, 500 and 375 μm). Trochanter and femoral scopa of hind leg distinctly sparse, and rather sparsely branched (Fig. 1D vs C). *Metasoma* Tergum 1 (T_1) on basal slope with dense, erect, plumose hairs (medially 250 μm , laterally to 300 μm), above moderately tomented, disc with sparse, simple, pale hairs (20–25 μm), lateral fringe (to 150 μm) plumose. T_2 – T_4 basally with tomental fasciae. T_2 posteriorly homogeneously with yellowish, fine, simple hairs (25–40

μm), dense but invisible from some direction, sparsely admixed with stouter, darker, semierect hairs (50 μm). T_3 – T_4 similar but posterior hairs gradually longer (to 125 μm) and darker; with semierect, dark hairs dense, some ones poorly and sparsely branched (to 250 μm); whitish lateral fringe to 400 μm on T_4 . T_5 – T_6 predominated with short, dark hairs except whitish lateral fringe. Ventrolateral areas of terga with hairs sparse, long (max. 500 μm), simple but some ones poorly plumose. Sternal hairs sparse, simple (max. 750 μm).

Structure. Head distinctly narrower than mesosoma, moderately elongate; inner orbits below rather straightforward convergent; outer orbits moderately rounded, convergent below (Fig. 2A). Eye with fine, very sparse setae, seen glabrous. Vertex seen frontally gently convex; lateral ocellus not attaining summit, lower margin on supraorbital line; ocellular area with fine (ϕ 15–12 μm) and shallow punctures (PP); interspaces (IS) not linear but narrower than PP, dully shining; ocellar and postocellar areas similar, on the latter PP tending to form transverse rows; ocellar area gently raised, posteriorly mildly depressed. Occiput carinate. Frons flat, seen microareolate, with IS linear and areolae small (ϕ 20 μm or less) and acute, forming oblique-longitudinal rows; frontal carina distinct, above replaced by fine, linear sulcus attaining near mid ocellus. Supraclypeus and paraocular area finely meshlike tessellate, dully shining with obscure, shallow PP (ϕ 25–35 μm , IS/PP $\phi=1.0$ or more); supraclypeus gently raised above. Epistomal angle acute, epistomal lobe developed (Fig. 2A). Clypeus rather flat, the part below suborbital line longer than half the clypeal length; above sculptured as on supraclypeus but IS = 1.0–3.0; below obscurely, longitudinally undulate, smooth and shining, PP ϕ 25–40 μm , often elongate; apically transversely depressed, lateral tooth mild but distinct. Gena moderately wide, above not swollen, sculptured as on ocellular area but PP finer. Hypostoma mat with dense striation. Malar space linear. Labrum (Fig. 2E, F) with large, transverse-rectangular, flat, basal tubercle; apical part triangular with distinct median keel, subapically tuberculate. Mandible bidentate (Fig. 2A). Glossa extremely long (Figs. 1, 7A,B), maxillary and labial palpi normal (6- and

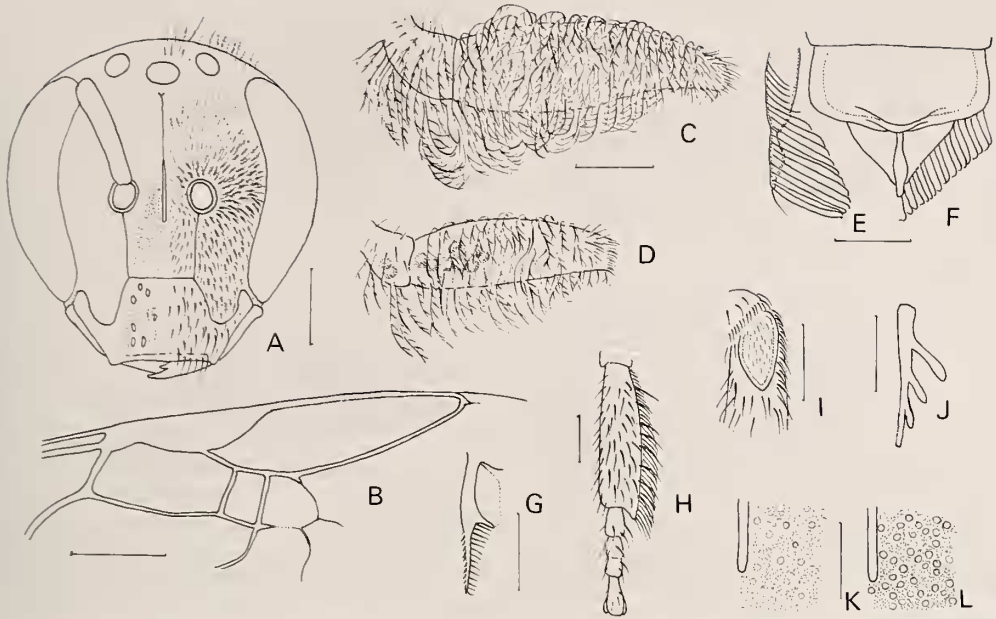


FIG. 2. Female characters of *L. serenum* (A, B, D-K), *L. duplex* (C) and *L. halictoides* (L). A, face seen frontally; B, fore wing; C, D, femoral scopa; E, F, lateral and dorsal view of labrum; G, strigilis (antenna cleaner); H, fore tarsi; I, basitibial plate; J, inner hind tibial spur; K, L, mesoscutal sculpture. Scale = 0.5 mm in A-D, 0.25 mm in E-L.

4-segmented, ratios 5/7/7/8/8/8 and 10/5/6/6 in *L. serenum* (Fig. 7A, B). Scape attaining mid ocellus.

Pronotum dorsally concave; lateral angle very obtuse, inconspicuously angulate seen both frontally and dorsally; dorsal ridge carinate; lateral ridge vestigial; lateral surface and lobe virtually unseparated. Mesoscutum anteriorly neither projecting nor bilobed, roundly truncate; declivity not forming differentiated lip; median line not weakened throughout; parapsidal line distinct; disc coriaceous and dull, with obscure PP ($\phi = 520 \mu\text{m}$) (Fig. 2K, L), denser, finer and more distinct near posterior margin. Mesoscutellum flat, medially not depressed, sculptured as on mesoscutum. Mesopleuron strongly reticulate, rather irregularly above and anteriorly; the rest forming dense, transverse carinulae. Propodeal dorsum (Fig. 3) mildly sloping, subapically limited by mild, crescent ridge; basally coriaceous, dull with rather sparse, strong rugae, either longitudinal and radiated laterally or irregular, often anastomosing; postward not extending beyond crescent ridge; lateral and posterior margins strongly carinate

though weakened medially where confluent with crescent ridge; posterolateral angle acute but not pointed. Tegula dully shining with superficial tessellation.

Fore basitarsal comb entire, accompanied with long hairs nearby (Fig. 2H). Strigilis of common *Lasioglossum* type (Fig. 2G); malus as long as vellum, outer margin denticulate; vellum with inner margin straight. Mid and hind legs normal; basitibial plate elliptical, apically rather pointed (Fig. 2I). Inner hind tibial spur (Fig. 2J) with 3-4 rather long flat teeth, the most apical one often small. Both hind tibia and basitarsus slender, the latter parallel-sided, the ratio tibia, basi- and ditarsi 42:23:23. Marginal cell apically apart from wing margin; tc 3 distinctly reduced but tc 2 not (Fig. 2B).

Metasoma elongate oval. Tergum 1 not pedunculate, boundary between basal slope and disc rounded; basal slope distinctly but superficially tessellate, dully shining with ϕ PP 12-20 μm and IS 3.0 or more; disc similarly sculptured but tending to lineolate with PP finer (ϕ 10-12 μm), IS 1.0-2.0; sparse (2.0-3.0) on very mild boss; mar-

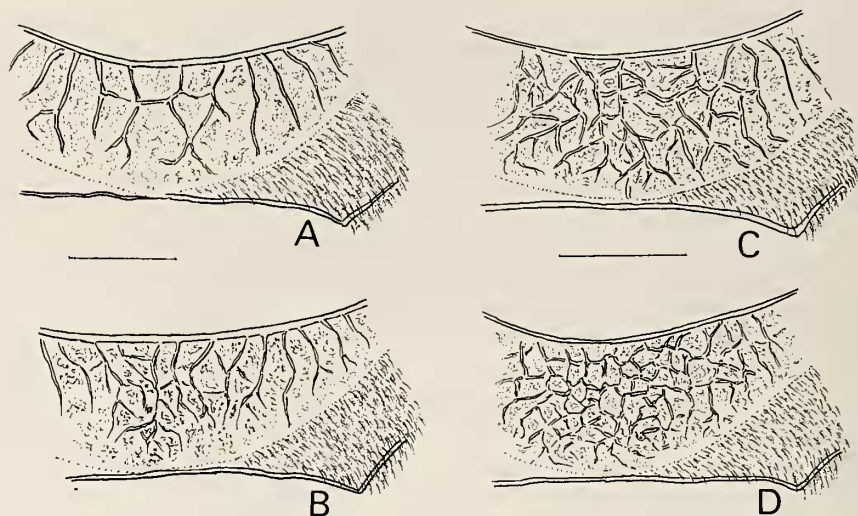


FIG. 3. Propodeal dorsum of females of *L. serenum* (A, B) and *L. halictoides* (C, D). A, B, specimens with ridges sparse and dense; C, D, specimens from Kota Kinabalu (Borneo) and Manado (Sulawesi). Scale=0.25 mm.

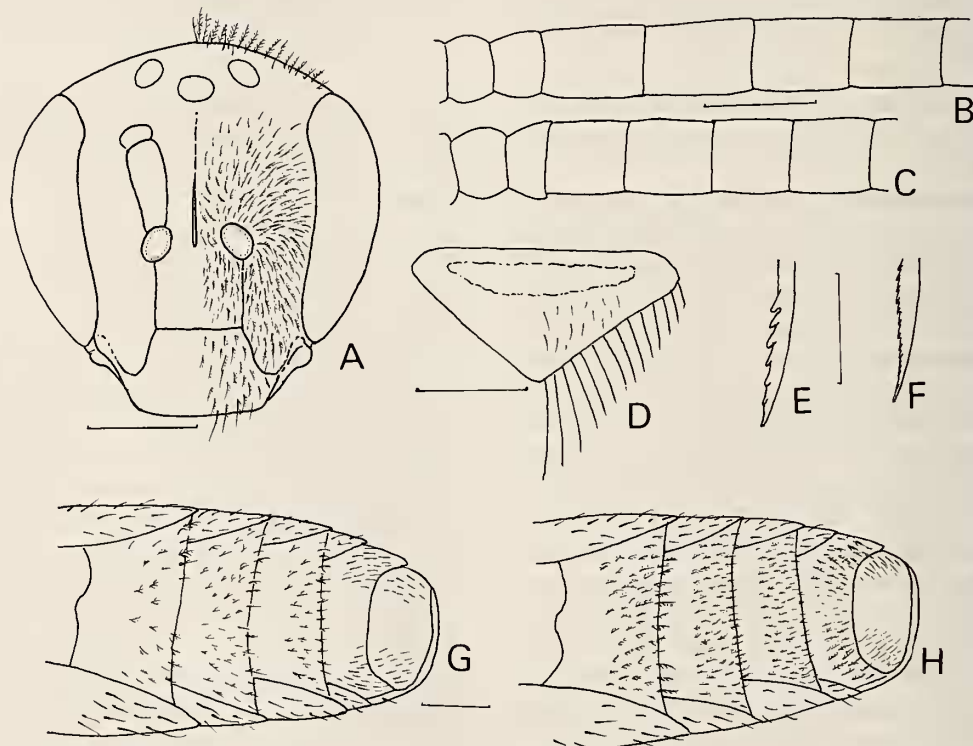


FIG. 4. Male characters of *L. serenum* (A, C, D, F, H) and *L. halictoides* (B, E, G). A, face seen frontally; B, C, basal flagellomeres; D, labrum seen dorsally; E, F, inner hind tibial spur, G, H; sternal pilosity. Scale=0.5 mm in A, G, H; 0.25 mm in others.

ginal area mildly depressed only behind boss; PP sparser than on disc. T_2 etc. similar but tessellation more conspicuous and PP gradually coarser on posterior terga though always weak and ϕ never exceeding $25 \mu\text{m}$; boss and marginal area more clearly differentiate even though still inconspicuously. Sterna normal, densely lineolate, post-gradular area coarsely granulate.

Male *Coloration* as in female, clypeus and legs without pale markings. *Pilosity* as in female: Plumose hairs on paraocular area denser and more appressed. Hairs on legs moderately sparse, on tibiae and basitarsi relatively long; hairs on fore leg attaining $250 \mu\text{m}$, on mid femur below $175 \mu\text{m}$, mid basitarsus below $200 \mu\text{m}$, hind femur $200 \mu\text{m}$, basitarsus $250 \mu\text{m}$, all poorly plumose and rather erect. Sterna (Fig. 4G, H) with rather sparse homogeneous, semierect and poorly plumose hairs.

Structure Except metasomal terminalia similar

to female but (1) eye more swollen (Figs. 2A, 4A), (2) scape shorter, not attaining mid ocellus (Figs. 2A, 4A, 6), (3) flagellomeres longer (Fig. 6), (4) vertex more raised (Figs. 2A, 4A), (5) labrum (Fig. 4D) triangular, flat, basally mildly raised transversely, apically mildly pointed, (6) mandible edentate, (7) clypeal tooth obsolete, (8) legs of normal male type, hind basitarsus apically more convergent, (9) inner hind tibial spur (Fig. 4E, F) with appressed denticles, (10) hind distitarsi slender; ratio hind tibia, hind basi- and distitarsi 38/20/20.

Metasomal sternum 5 (S_5 , Fig. 5A, B) with basal margin widely incurved, apically deeply emarginate, lateral process sparsely haired, gradulus transverse, curved laterally. S_6 basally deeply incurved, apodemal lobe long, gradulus transverse, evanescent laterally (Fig. 5C, D). S_7 apically projecting. S_8 medially very elongate, apically tapering and finely haired. (Fig. 5E, F). Gonobase long, para-

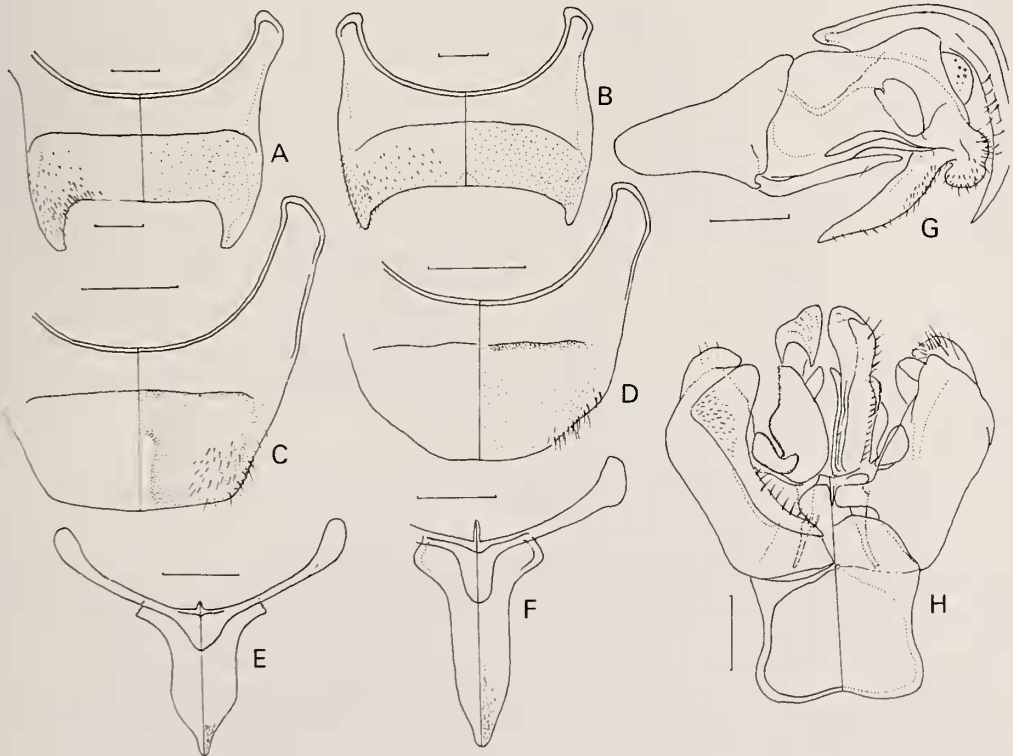


FIG. 5. Male terminalia of *L. serenum* (B, D, E, G, H) and *L. halictoides* (A, C, F). A, B, Sternum 5 (hairs shown in left half, sculpture in right half), C, D, S_6 ; E, F, $S_{7,8}$; G, H, genitalia seen laterally (G), ventrally (H, left) and dorsally (H, right). Scale = 0.33 mm in C, D; 0.25 mm in others.

llet-sided (Fig. 5G, H); gonocoxite (Fig. 5H) not continuing gonobasal outline, outer margin not outcurved but angulate, about two times longer than wide; gonostylus (Fig. 5G) short and rounded, sparsely haired; retrose lobe (Fig. 5G, H) very long, slender, apically pointed, with fine short hairs basally and long erect hairs apically.

Morphometric Comparison

Figure 6 compares main metric characters of

both sexes of the two species. On the average, *L. serenum* is smaller in most characters but the values are very similar between the two species. By non-overlap of SD, only the following characters show the significant difference (indicated with arrows, *s*=*serenum*, *h*=*halictoides*, $\bar{x} \pm SD$ in parentheses (40 units=1 mm, *n*=4 in WD, Sm2L, Sm3L in *h* ♂, *n*=5 in all others). Female: CAL (*s* 35.1±1.3, *h* 38.4±2.7), IAD (*s* 8.3±0.45, *h* 9.4±0.5); Male: McL (*s* 37.0±1.4, *h* 41.6±1.4), Sm2L (*s* 5.0±1.6, *h* 8.6±1.2), CAL (*s* 32.0±1.4, *h* 36.0

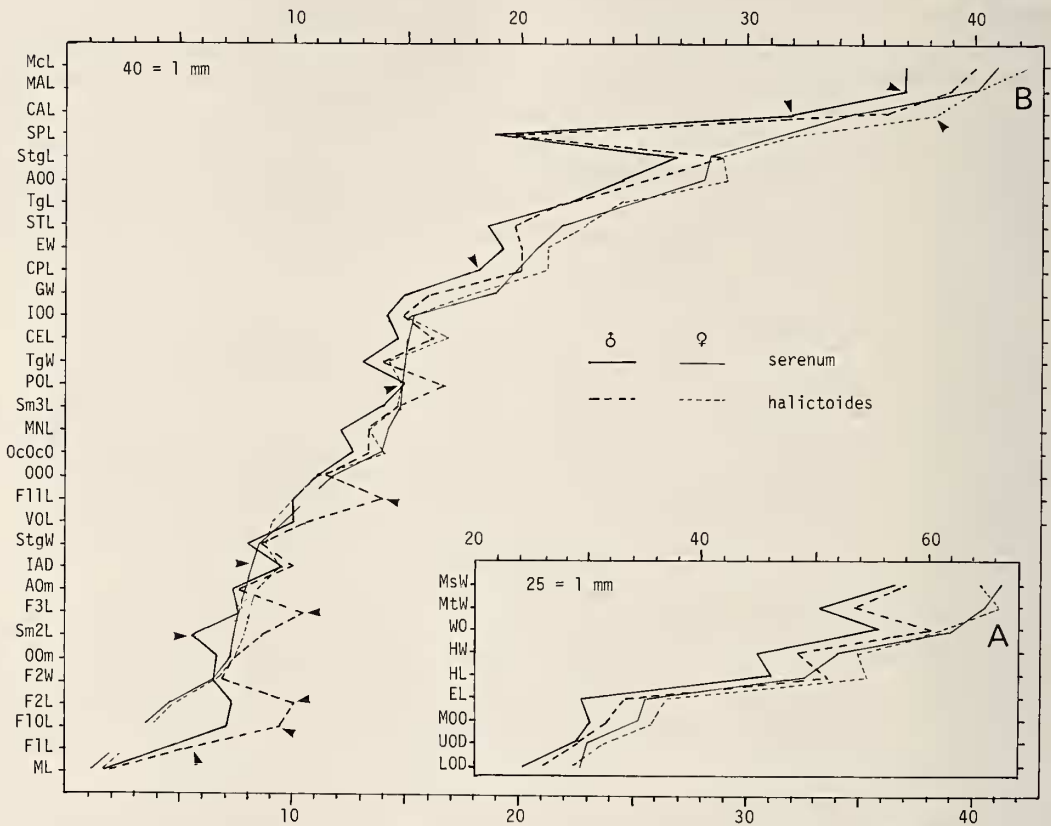


FIG. 6. Comparison of male and female metric characters in *L. serenum* and *L. halictoides*, arranged in both A (25 units=1 mm) and B (40 units=1 mm) in the descending order in *L. serenum* female. L, W, D=length, width, distance. A: MsW, MtW (meso- and metasomal W), WD (Wing diagonal=D between *M-Cu* bifurcation and inner tip of marginal cell), HW, HL (head W and L), EL (eye L), MOD, UOD, LOD (maximum, upper, and lower interorbital D). B: McL (marginal cell L), MAL (L between marginal cell tip and wing tip), CAL (clypealveolar D), SPL (scape L), StgL (pterostigma L), AOD (alveolar D), TgL (tegula L), STL (scutellum L), EW (eye W, seen laterally), CPL (clypeus L), GW (gena W, seen laterally), IOD (interocellar D), CEL (L of apical clypeal part exceeding lower orbital line), TgW (tegula W), PDL (propodeal dorsum L), Sm3L, Sm2L (submarginal cell 2, 3 L), MNL (metanotum L), OcOcD (ocelloccipital D), OOD (ocellocular D), F_nL, W (flagellomere *n* L, W), VOL (verticorbital L=tangential L between summit of vertex and supraorbital line), StgW (pterostigma W), IAD (interalveolar D), ADm, ODm (alveolus and mid ocellus diameter), ML (malar L).

± 1.9), CPL (s 18.2 ± 0.8 , h 20.2 ± 1.2), PDL (s 14.9 ± 0.8 , h 16.8 ± 0.8), F11L (s 10.0 ± 0.6 , h 14.0 ± 0.3), F3L (s 7.7 ± 0.52 , h 10.5 ± 0.3), F2L (s 7.2 ± 0.5 , h 10.1 ± 0.4), F10L (s 7.0 ± 0.3 , h 9.4 ± 0.5), F1L (s 4.2 ± 0.3 , h 5.2 ± 0.2). Male flagellomeres are distinctly longer in *L. halictoides* (Fig. 4B, C).

Some important ratios are also not much different between the two species HW/MsW/MtW (φ both s , h $1/1.28/1/25$; δ s $1/1.27/1.12$, h $1/1.19/1.10$), HW/HL (φ s $1/0.99$, h $1/1.01$; δ s $1/1.03$, h $1/1.05$), UOD/LOD (φ s $1/0.95$, h $1/0.98$; δ s $1/0.90$, h $1/0.89$), CPL/CAL/CEL (φ s $1/1.80/0.77$ h $1/1.81/0.80$; δ both s , h $1/1.76/0.80$), IOD/OOD (φ s $1/0.75$, h $1/0.73$; δ both s , h $1/0.79$), EW/GW (φ s $1/0.90$, h $1/0.85$; δ both s , h $1/0.78$), SCL/MNL/PDL (φ s $1/0.64/0.67$, h $1/0.59/0.70$; δ s $1/0.65/0.81$, h $1/0.68/0.85$), HW/WD (φ s $1/1.19$, h $1/1.14$; δ s $1/1.24$, h $1/1.26$).

The most conspicuous feature of *Nesohalictus*, the length of elongate glossa, was measured only in several specimens (length of glossa/ratio length of glossa to wing diagonal): φ , *serenum* (1.5 mm/0.25, 1.7 mm/0.30), *halictoides* (2.0 mm/0.38, 2.6 mm/0.43, 3.2 mm/0.61*); δ , *serenum* (1.3 mm/0.25, 1.4 mm/0.25, 1.5 mm/0.25, 1.6 mm/0.32*, 2.0 mm/0.38), *halictoides* (2.0 mm/0.38, 2.3 mm/0.42, 2.5 mm/0.45, 2.9 mm/0.49, 3.6 mm/0.65*). Mouth parts are extended forward in asterisked specimens (Fig. 7B) and flexed in others. In the former position the glossa is longer possibly because the basal part is fully extended. From all obtained results, it is concluded that *L. halictoides* has the glossa longer than *L. serenum* in both the absolute length as well as the length relative to the wing length.

Structural Comparison

Female (1) Color generally paler in *s* (*serenum*), especially tegula pale brown against dark to blackish brown in *h* (*halictoides*). Veins pale brown in *s*, brown in *h*; pterostigma and subcosta brown in *s*, chestnut to dark brown in *h*. (2) Tergum 1 (and often also T₂ basally) pale reddish brown in *s*, homogeneously dark in *h*. (3) Hairs paler, usually whitish in *s*, more yellowish in *h*. (4) Basal fasciae of T₂-T₄ wider and continuous in *s*, narrower and often medially interrupted in *h*. (5) Mesoscutal

and -scutellar PP rather ill-defined and sparser, IS = 1.5–3.0 of ϕ PP in *s* (Fig. 2K), more distinct and denser, often ϕ PP > IS even on scutal disc medially in *h* (Fig. 2L). (6) Rugae of propodeal dorsum on the average sparser and seldom attaining crescent subapical ridge in *s* (Fig. 3A, B), denser and often attaining ridge in *h* (Fig. 3C, D). (7) Tegular sculpture more superficial in *s* than in *h*.

Male (1) Coloration as in female but terga of *s* often darker, ranging from pale brown to blackish. (2) Sternal hairs of *s* (Fig. 4H) denser, not confined to apical half of each sternum, more distinctly plumose and, semiappressed in *s* (Fig. 4H); sparser, confined to apical half and rather erect, only appressed marginally in *h* (Fig. 4G). (3) Sterna with more distinct tessellation and duller in *s*, more superficially tessellate and shinier in *h*. (4) Denticles of hind inner tibial spur finer and homogeneous in *s* (Fig. 4F), stronger and middle ones longest (Fig. 4E) in *h*. (5) Posterior margin of metasomal sternum 5 (S₅) gently incurved in *s*, transverse in *h* (Fig. 5B, A). (6) S₆ with apodemal lobe shorter and apical margin only medially truncate in *s* (Fig. 5D), lobe longer and apex more widely truncate in *h* (Fig. 5C). (7) Median lobe of S₇ shorter and apically acutely tapering in *s*, longer and mildly tapering in *h*. (8) Median part of S₈ triangular in *s*, slender and elongate in *h* (Fig. 5E, F). (9) Gonostylus seen dorsally more triangular in *s*, rather rounded in *h*.

Synonymy and Distribution

Lasioglossum (*Nesohalictus*) *halictoides* (Smith)

Andrena (nec *Nomia* as cited by Blüthgen 1931) *halictoides* Smith, 1859, J. Proc. Linn. Soc. London, Zool., 3 (1858): 6, φ (Celebes).

Halictus halictoides, Cockerell, 1922, Ann. Mag. Nat. Hist., (9) 9: 662; Blüthgen, 1930, Mitt. deuts. entom. Gesell., 75 (syn. *H. biroï*).

H. biroï Friese, 1909, Ann. Mus. Nat. Hungar., 7: 188, Blüthgen, 1926, Zool. Jb., Syst., 51: 541 (Key to allied spp. φ ; syn. *carinatifrons*, etc.), (New Guinea).

H. carinatifrons Strand, 1910, Berlin. entom. Zts., 54, (1909): 196, δ , φ : Blüthgen, 1922, Deuts. entom. Zts., 53, 54 (synn.); 1926, Zool.

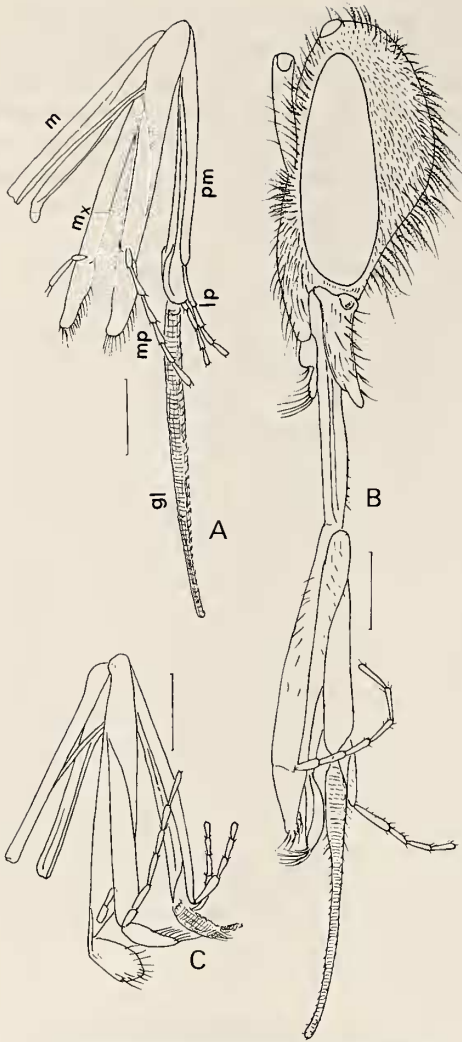


FIG. 7. Mouthparts of females of *L. serenum* (A, B) and *L. duplex* (C). A, C, mentum and prementum, flexed; g=glossa, mx=maxilla, mp, lp=maxillary and labial palpi, m=mentum, pm=prementum. B, mentum and prementum extended.

Jb., Syst., 51: 541 (Taiwan).

H. heymonsii Strand, 1910, Berlin. entom. Zts., 54 (1909): 207, ♂; Blüthgen, 1922, Deuts. entom. Zts., 53 (syn. *carinatifrons*), (Taiwan).

H. blepharophorus Strand, 1913, Supplm. Entom., 2: 28 ♂ (nec ♀=*micado* Strand, 1910=*cattulus* Vachal, 1894, ♀=*vagans* Smith, 1857, ♀); Blüthgen, 1923, Deuts. entom. Zts.: 242 (= *ceylonicus* Strand 1910, ♂); 1926, Zool. Jb., Syst., 51: 541 (Sri Lanka).

H. taihorinis var. *anpingensis* Strand, 1914, Arch. Naturg. 79A: 151, ♀; Blüthgen, 1923, Deuts. entom. Zts.: 241 (= *ceylonicus* Strand, 1910 ♀); 1926, Zool. Jb., Syst., 51: 542.

H. lativentris Friese, 1914 (nec Schenck, 1853), Tijdschr. Entom., 57: 22, ♀, ♂ (Java); Blüthgen, 1925, Deuts. entom. Zts.: 400 (= *carinatifrons* Strand, 1910); 1926, Zool. Jb., Syst., 51: 542.

H. (Nesohalictus) robbii Crawford, 1910, Proc. U. S. Nat. Mus., 38: 120, ♀, ♂ (Philippines); Blüthgen, 1925 Deuts. entom. Zts., 1925: 415 (= *carinatifrons* Strand, 1910); 1931, Zool. Jb., Syst., 61: 300.

Nesohalictus robbii, Cockerell, 1919, Phil. J. Sci., 15: 269.

Lasioglossum (Nesohalictus) biroi, Michener, 1965, Bull. Amer. Mus. Nat. Hist., 130: 174.

Blüthgen [3, 4] synonymized various names with *L. halictoides*. Cockerell [5] is skeptical for this lumping. Here the former treatment is adopted although a subspecific differentiation is likely to occur in this species widely distributed in various islands. Blüthgen [3] synonymized *Halictus blepharophorus* Strand from Sri Lanka with *L. halictoides* but later did not mention the occurrence of *L. halictoides* in Sri Lanka. It is likely that *H. blepharophorus* is synonymous with *L. serenum* from Sri Lanka, not with *L. halictoides*. Critical comparison of the type specimen of *H. blepharophorus* with both *L. serenum* and *L. halictoides* is necessary.

Specimens examined: *Sabah* (new record) Jesselton (now Kota Kinabalu), 3 ♂ 10 1965 (one ♂ with an emergence hole of stylops between terga 3-4), 2 ♀ 7 ix 1966; *Sarawak* (new record) Kuching 2 ♂ 8 ix 1966; Manado (previously Menado), Sulawesi, 1 ♀, 1 iii 1984; *Krakatau* (new record): Anak Krakatau, 1 ♀, 29 vii 1982; Rakata, 1 ♀, 30-31 viii, 1984.

Distribution: Taiwan, Philippines, Java, Borneo, Sulawesi, Krakatau, New Guinea, ? Sri Lanka.

Lasioglossum (Nesohalictus) serenum
(Cameron) comb. nov.

Halictus serenus Cameron, 1897, Mem. Manchester Soc., 41: 97, ♂ (India); Blüthgen, 1930, Mitt. deuts. entom. Gesell., 1930: 76 (= *strandiel-*

lus Cockerell); 1931, Zool. Jb., Syst., 61: 300.

H. deesanus Cameron, 1908, J. Bombay Nat. Hist. Soc., 13: 309, ♀ ♂ (India); Blüthgen, 1931, Mitt. deuts. entom. Gesell., 1931, 76 (= *H. serenium* Cameron).

H. ceylonicus Strand, 1910 (nec Cameron, 1902 = *alphenum* Cameron, 1899), Berlin. entom. Zts., 54 (1909): 187, ♂; Blüthgen, 1922, Deuts. entom. Zts., 53 (= *carinatifrons* Strand, 1910); 1925, Deuts. entom. Zts., 385 (= *strandiellus* Cockerell 1911).

H. strandiellus Cockerell, 1911, Ann. Mag. Nat. Hist. (8) 8: 192 (= n. n. for *ceylonicus* Strand, nec Cameron); Blüthgen, 1925, Deuts. entom. Zts., 385; 1926, Zool. Jb. Syst., 51: 541.

H. hornianus Strand, 1913, Arch. Naturg., 79, A, 2: 138, ♂; Blüthgen, 1925, Deuts. entom. Zts.: 399 (= *strandiellus* Cockerell); Blüthgen, 1926, Zool. Jb., Syst. 51: 542.

Specimens examined: Sri Lanka Col. Dist., Colombo, Museum Gardens, 1 ♂ 18 i 1977; Ham. Dist., Palatupana tank, 1 ♀ 21–22 vi 1978, Yala, Palatupana, 1 ♂ 21–22 vi 1978; Kan. Dist., Kandy, Udawattakele Sanctuary, 2100 ft, 1 ♂ 1–17 ix 1976, 1600 ft, 1 ♂ 18–21 i 1977; Man. Dist., Cashew Corp., Ma Villu, 1 ♀ 17–21 ii 1979; Mon. Dist., Angunakalapelessa (Malaise trap), 1 ♀ 2 ♂ 17–19 vi 1978; Pol. Dist., 25 mi SE Pelonnaruwa, 1 ♂, 10 vi 1975; Put. Dist., Deduniyoia, 1 ♀ 5 iii 1958; Vav. Dist., Parayanalankulam Irrigation Canal, 25 mi NW Medawachchiya, 100 ft, 1 ♀ 20–25 iii 1970. India Kerala: Walayer, subtropical monsoon forest, *Ipomea*, 1 ♀, 29 i 1978; Tamil Nadu: Coimbatore 3 ♂, 5–10 xii 1978, Madras, City Park, 1 ♂, 19 viii 1975.

Distribution: Sri Lanka, India.

Taxonomic and Bionomic Notes

Nesohalictus is closely allied to *Ctenonomia*, the large palaeotropic subgenus of *Lasioglossum* [6]. Apart from its long glossa and simplified femoral scopa, *Nesohalictus* could be regarded as a specialized species group of *Ctenonomia*. Among the species groups of *Ctenonomia*, the *carinatum* group is similar to *Nesohalictus* group by the carinate occiput (previously the occiput of this group was erroneously described as "carinate or

not", 6), and lateral and posterior margins of propodeal dorsum continuously carinate, but differs by posterolateral corner of propodeal dorsum not glabrous but haired as in the *vagans* group whose occiput is not carinate.

The peculiar fore basitarsal comb and hind femoral scopa were assumed as adaptations to collect coarse pollen such as of *Hibiscus* [2]. The presence of such coarse pollen within scopa in one female of *L. serenium* (Fig. 2D) from Sri Lanka and one female of *L. halictoides* from Krakatau favors the above assumption. On the other hand, the flower preference of *Nesohalictus* for nectar intake is still unknown. Blüthgen [3] mentioned that glossa of *L. serenium* is about as long as that of *L. halictoides* but actually shorter as aforementioned. The third known species, *L. (N.) goluratum* (Blüthgen, 3) from Burma and Penang has the distinctly shorter glossa. The three species seem to form a series of the prolongation of glossa (*halictoides* > *serenium* > *goluratum*).

Nothing is known on the nest architecture, life cycle and social pattern of the three *Nesohalictus* species. Clarification of their bionomics by residential naturalists is requested.

ACKNOWLEDGMENTS

I thank all colleagues and friends who collected examined specimens or put them at my disposal for studies, particularly Dr. K. V. Krombein (Department of Entomology, Smithsonian Institution, Washington, D. C.) and Prof. S. Takagi and Dr. T. Kumata (Entomological Institute, Hokkaido University, Sapporo). This paper is a part of "Biosystematic studies of the Insects of Sri Lanka" directed by Dr. Karl V. Krombein, Smithsonian Institution, Washington, D. C. and "Research Trips for Forest and Agricultural Insects in the Subcontinent of India JICT: (Hokkaido University, University of Calcutta and Zoological Survey of India Joint Project) Scientific Report Nr. 44".

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Addendum:

Ebmer (1987, Senckenbergia biol., **68**: 84) transferred *L. (N.) goluratum* from *Nesohalictus* to *Ctenonomia*.